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7 (Currently Amended): An insulating film comprising:

n (n being an integer larger than 2) layers of barrier layers each consisting of a material having a bandgap larger than a first bandgap and having a relative permittivity smaller than a first relative permittivity; and

(n-1) layers of well layers each consisting of a material having a bandgap smaller than the first bandgap and having a relative permittivity larger than the first relative permittivity, ~~discrete energy levels being formed in the well layer by a quantum effect,~~

each of the barrier layers and each of the well layers being stacked by turns, ~~and~~ discrete energy levels being formed in each of the well layers by a quantum effect,

each of the barrier layers having a thickness not smaller than 2.5 angstroms, and the following condition being satisfied:

$2.5 > (d1/\varepsilon1 + d2/\varepsilon2 + \ldots + dn/\varepsilon n)$

where dm (m=1, 2, ..., n) is the thickness of the m-th layer of the barrier layers and εm (m=1, 2, ..., n) is the relative permittivity of the m-th layer of the barrier layers.

9 (Currently Amended): The insulating film according to Claim[[8]] 7, wherein ~~the thicknesses of the n layers of~~ the barrier layers ~~are~~ each have a thickness not smaller than 3.5 angstroms.

10 (Original): The insulating film according to Claim 7, wherein a thickness of at least one of the well layers is not larger than 5 angstroms.

11 (Currently Amended): An insulating film comprising:

n (n being an integer larger than 2) layers of barrier layers each consisting of a material having a conduction band whose energy level is higher than an energy level of a conduction band of silicon by 0.5 electron volts or more and having a valence band

whose energy level is lower than an energy level a valence band of silicon by 0.5 electron volts or more; and

(n-1) layers of well layers each consisting of a material having a bandgap smaller than a bandgap of SiO_2 and having a relative permittivity larger than a relative permittivity of SiO_2, and thicknesses of the well layers being not larger than 10 angstroms,

each of the barrier layers and each of the well layers being stacked by turns to form a multi-quantum well structure,

each of the barrier layers having a thickness not smaller than 2.5 angstroms, and the following condition being satisfied:

$2.5 > (d1/\varepsilon1 + d2/\varepsilon2 + \ldots + dn/\varepsilon n)$

where dm (m=1, 2, ..., n) is the thickness of the m-th layer of the barrier layers and εm (m=1, 2, ..., n) is the relative permittivity of the m-th layer of the barrier layers.

13 (Currently Amended): An electronic device comprising:

a semiconductor layer;

an insulating film provided on the semiconductor layer, including

n (n being an integer larger than 1) layers of barrier ~~layer~~ layers each consisting of a material having a bandgap larger than a first bandgap and having a relative permittivity smaller than a first relative permittivity; and

(n-1) layers of well layers each consisting of a material having a bandgap smaller than the first bandgap and having a relative permittivity larger than the first relative permittivity, ~~discrete energy levels being formed in the well layer by a quantum effect;~~

each of the barrier layers and each of the well layers being stacked by turns, and discrete energy levels being formed in each of the well layers by a quantum effect, and

each of the barrier layers having a thickness not smaller than 2.5 angstroms, and

the following condition being satisfied:

$2.5 > (d1/\varepsilon 1 + d2/\varepsilon 2 + \ldots + dn/\varepsilon n)$

where dm (m=1, 2, ..., n) is the thickness of the m-th layer of the barrier layers and εm (m=1, 2, ..., n) is the relative permittivity of the m-th layer of the barrier layers; and

a gate electrode provided on the insulating film,

an electric field in the semiconductor layer under the insulating film being controllable by applying a voltage to gate electrode.

21 (New): The insulating film according to claim 11, wherein each barrier layer has a thickness not smaller than 3.5 angstroms.

22 (New): The insulating film according to claim 11, wherein at least one of the well layers has a thickness not larger than 5 angstroms.

23 (New): The electronic device according to claim 13, wherein each barrier layer has a thickness not smaller than 3.5 angstroms.

24 (New): The electronic device according to claim 13, wherein at least one of the well layers has a thickness not larger than 5 angstroms.